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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,162	12/29/2000	Keuk-Sang Kwon	3430-0164P	6546

2292 7590 09/30/2003

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
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LANEAU, RONALD

ART UNIT	PAPER NUMBER
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2674

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DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/750,162

Applicant(s)

KWON ET AL.

Examiner

Ronald Laneau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Response to Amendment***

1. The amendment filed on 7/11/03 has been entered. Claims 1-5 are still pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art (AAPA) in view of Shin (6,307,531).

As per claim 1, Applicant disclose in the AAPA a quad type liquid crystal display device RGGB comprising a liquid crystal panel having gate and data lines which define sub-pixel regions, gate driving integrated circuits seen either on the left and the right side of the circuit, a

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plurality of data drive circuits 115c, 115d arranged on one side of the liquid crystal panel and in this case on the upper portion of the panel, each of the data drive integrated circuits having “m” (m is natural number) number of channels as claimed (see AAPA, figure 5). Shin is cited to show that using more than three data drive ICs ( $32_1, 32_2, 32_3, \dots, 32_n$ ) in a single bank structure for a liquid crystal display device is well known in the art as seen in figure 4. Neither the AAPA nor Shin discloses the  $(3n-1)$  channels for each data drive but it would have been obvious to one of ordinary skill in the art to spread out the floating channels or the non-use channels over the entire drive IC because it would provide a good balance in preventing the waste of liquid crystal inserted between the substrates.

As per claim 2, Applicant discloses in the AAPA a device wherein each of two sub-pixels correspond to red, a first green, a second green, and a blue color filters as claimed (see figure 5).

As per claim 3, the device disclosed in the AAPA is a device wherein m is 384 as claimed (see page 5, lines 1-2 of AAPA, figure 5).

As per claim 4, Applicant discloses in the AAPA only three data integrated circuits (see figure 5) but Shin is cited to teach a liquid crystal display having driving integrated circuits in a single bank and including first to nth D-ICs spatially arranged in the upper region of the liquid crystal panel (see column 3, lines 24-26).

It would have been obvious to one of ordinary skill in the art to utilize four data drive integrated circuits (D-ICs) as taught by Shin into the AAPA for the same reasons stated in claim 1.

As per claim 5, Applicant discloses in the AAPA a liquid crystal display panel having a plurality of drive integrated circuits for driving the panel, each having “m” (natural

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number) number of channels and “n” ( $n < m$ , natural number) number of floating channels see figure 5), a plurality of film for connecting the drive integrated circuits. Applicant does not disclose in the AAPA that each film having (m-n) number of lines. Shin is cited to show that using more than three data drive ICs ( $32_1, 32_2, 32_3, \dots, 32_n$ ) in a single bank structure for a liquid crystal display device is well known in the art as seen in figure 4. Neither the AAPA nor Shin discloses the (m-n) channels for each data drive but it would have been obvious to one of ordinary skill in the art to spread out the floating channels or the non-use channels over the entire drive IC because it would provide a good balance in preventing the waste of liquid crystal inserted between the substrates.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Takahara et al (JP publication number 04-168417).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Laneau whose telephone number is 703-305-3973. The examiner can normally be reached on Monday-Thursday from 8:00 AM to 6:00 PM or via email: [ronald.laneau@uspto.gov](mailto:ronald.laneau@uspto.gov).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached at 703-305-4709.

7. **Any response to this action should be mailed to:**

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Commissioner of Patents and Trademarks

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**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the Technology Center 2600 Customer Service Office whose telephone  
number is (703) 306-0377.

Ronald Laneau  
Examiner  
Art Unit 2674



RICHARD HILDE  
SUPERVISORY EXAMINER  
TECHNOLOGY CENTER 2600

rl  
September 7, 2003